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IMPROVED BREAD FORMULAS

for School Lunch, Institutional, and Hospital Use

Five improved bread formulas developed by the Bureau of Human Nutrition and Home Economics were tested by a large baking company in 500- and 1,000-pound batches, using regular equipment and usual procedures. Consumer acceptance tests of the commercially produced bread were made in school lunch programs and hospitals with favorable results.

The nutritional quality and the palatability are improved by using enriched white flour along with 6 to 10 parts by weight of nonfat dry milk, and in some formulas by using in addition wheat germ, whole-wheat flour, or soy flour. Calculations show that the breads from the Bureau's formulas tend to be higher in nutritive value than those commonly used for the retail trade. (See p. 2.)

The breads offer a convenient and acceptable way of getting more of the nutrients likely to be below, into the diets of children, elderly persons, other adults, and convalescents.

The formulas may be used by schools and institutions in drafting specifications for the purchase of bread by bid or contract. Some bakers have shown considerable interest in supplying bread on this basis.

A bid or contract should specify the formula (or formulas) to be used; the size, shape, baked weight, and number of slices per loaf, and the price.

The pan size and weight found by the baking company to be suitable for school lunch, institutions, and hospital trade are included with each formula.

Prepared by
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WHITE BREAD (10 percent nonfat dry milk 1/)

	<u>Parts by weight</u>
Enriched wheat flour	100.0
Nonfat dry milk	10.0
Sugar	8.0
Fat	8.0
Salt	2.5
Compressed yeast	4.0
Water (variable)	65.0

Suggested pan size: 16-7/8 by 3-3/4 by 3-3/4 inches

Scaled weight: 32 ounces

Baked weight: 28 ounces

SOY BREAD (6 percent nonfat dry milk; 4 percent soy flour 1/)

	<u>Parts by weight</u>
Enriched wheat flour	96.0
Full fat soy flour	4.0
Nonfat dry milk	6.0
Sugar	7.5
Fat	7.5
Salt	2.5
Compressed yeast	4.0
Water (variable)	65.0

Suggested pan size: 16-7/8 by 3-3/4 by 3-3/4 inches

Scaled weight: 34 ounces

Baked weight: 30 ounces

SOY-WHEAT GERM BREAD (6 percent nonfat dry milk, 3 percent soy flour, 3 percent wheat germ 1/)

	<u>Parts by weight</u>
Enriched wheat flour	97.0
Full fat soy flour	3.0
Wheat germ	3.0
Nonfat dry milk	6.0
Sugar	8.0
Fat	6.0
Salt	2.5
Compressed yeast	4.0
Water (variable)	65.0

Suggested pan size: 16-7/8 by 3-3/4 by 3-3/4 inches

Scaled weight: 34 ounces

Baked weight: 30 ounces

RAISIN BREAD (10 percent nonfat dry milk, 50 percent raisins 1/)

	<u>Parts by weight</u>
Enriched wheat flour	100.0
Nonfat dry milk	10.0
Sugar	8.0
Fat	8.0
Salt	2.5
Compressed yeast	4.0
Water (variable)	65.0
Seedless raisins	50.0

Suggested pan size: 16-7/8 by 3-3/4 by 3-3/4 inches

Scaled weight: 35 ounces

Baked weight: 31 ounces

1/ Percent indicates weight in relation to total flour or flours.

Estimated Nutrient Content of One Pound of Bread 1/

Bread	Food energy	Pro- tein	Cal- cium	Iron	Thia- mine	Ribo- flavin	Nia- cin
	Cal.	Gms.	Mg.	Mg.	Mg.	Mg.	Mg.
<u>Improved formulas, with enriched flour:</u>							
White Bread (10 pct. nonfat dry milk).....	1,295	41	275	9.2	1.04	1.17	11.0
Soy Bread (6 pct. nonfat dry milk, 4 pct. soy flour).....	1,285	42	276	9.4	1.16	1.23	11.4
Soy-Wheat Germ Bread (6 pct. nonfat dry milk, 3 pct. wheat germ, 3 pct. soy flour).....	1,315	42	388	8.0	1.03	1.34	11.3
Raisin Bread (10 pct. nonfat dry milk, 50 pct. raisins).....	1,330	35	387	9.6	.94	1.14	9.3
Whole-Wheat Bread (6 pct. nonfat dry milk, 50 pct. whole wheat flour).....	1,200	41	291	9.1	1.14	.99	12.3
<u>Other formulas:</u>							
With 1.5 pct. nonfat dry milk, unenriched flour.....	1,190	36	134	2.7	0.21	0.30	3.4
With 3 pct. nonfat dry milk, enriched flour.....	1,200	37	184	8.6	1.08	1.00	10.5

1/ Calculated from nutritive value of ingredients in formulas, exclusive of dough conditioners and mold inhibitors. Percent indicates weight of milk solids, wheat germ, or raisins in relation to 100 parts of flour, including soy or whole wheat.

WHOLE-WHEAT BREAD (6 percent nonfat dry milk, 50 percent whole-wheat flour 1/)

	<u>Parts by weight</u>
Enriched wheat flour	50.0
Whole-wheat flour	50.0
Nonfat dry milk	6.0
Sugar	6.0
Fat	6.0
Salt	2.5
Compressed yeast	4.0
Water (variable)	64.0

Suggested pan size: 16-7/8 by 3-3/4 by 3-3/4 inches

Scaled weight: 34 ounces

Baked weight: 30 ounces

1/ Percent indicates weight in relation to total flour or flours.

